

REMARKS

By the foregoing amendment, Claims 1, 4, 8, 11 and 15 have been amended. Claims 1, 3-4, 6, 8, 10-11, 13, 15 and 18 remain pending. Favorable reconsideration of the application is respectfully requested.

Claims 8, 10, 11 and 13 were rejected under 35 U.S.C. §103(a) on the grounds of obviousness from Keener '230 in view of Kishikawa et al. for reasons of record. This combination of references was applied in the Office Action of January 10, 2006, and the Office Action of July 13, 2005, to Claims 8-13. Claims 8 and 11 have been amended, and Claims 9 and 12 have previously been cancelled. Kishikawa et al. was cited as teaching a surface-treated metal comprising a corrosion inhibitor and a binder including a mixture of polyvinyl butyral with a resin such as phenol. The Examiner referred to Keener '230 column 7, lines 19+, as teaching that the rivet and applied coating may be heated together to a suitable temperature in order to achieve heat aging and curing in a single step. The Examiner indicated that it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the time and temperature at which the coating was cured, but it is respectfully submitted that Keener '230 teaches away from maintaining the temperature of the coating and the heat treated rivets below a maximum temperature of about 300°F.

At column 1, lines 35-67, Keener '230 explains that in the prior art at the time the invention was made, although it had been the practice to coat some types of fasteners made of a base metal having a high melting point, such as fasteners made of steel or

titanium alloys, with organic coatings to protect the base metal of the fasteners against corrosion damage, this approach did not work for fasteners made of aluminum alloys having a much lower melting point and a generally much lower heat-treatment temperature than steel and titanium alloys. According to Keener '230, in the prior art it was not the practice to coat high-strength aluminum-alloy fasteners with curable coatings, because the curing treatment for the coating could adversely affect the strength of the fastener, and the aluminum-alloy fasteners were more susceptible to corrosion.

Claim 8 recites the steps of heat treating aluminum alloy rivets to increase their shear strength, washing the rivets with a solution containing chromic acid and a fluorine compound, applying a coating of a solution of a solvent, a resin binder, a chromate compound and an elasticizer to the heat treated rivets, and curing the coating, which the prior art according to Keener '230 taught would lead to an adverse effect on the strength of the fastener. At column 7, lines 45-50, and column 8, lines 40-44, Keener '230 teaches curing and heat treating coated aluminum alloy rivets and maintaining the temperature at 355°F for 8-12 hours. At column 10, lines 1-12, Keener '230 teaches a modified curing cycle reaching a temperature of 375°F.

In contrast, in the present invention, adverse effects on the strength of a heat treated aluminum alloy fastener are avoided by maintaining the heat treated, coated fasteners at a temperature below 300°F. Claim 8 has been amended to clarify this, and recites “maintaining the temperature of the coating and the heat treated rivets below a maximum temperature of about 300°F.” Claim 11 similarly recites “maintaining the temperature of the coating and the heat treated rivets below a maximum temperature of

about 300°F.” It is respectfully submitted that Keener '230 clearly teaches raising the temperature of a heat treated, coated fastener far above 300°F for extended periods of time. The Examiner noted that at column 4, lines 55+, Keener '230 teaches heat treating an aluminum alloy rivet prior to coating it, but the later curing and heat treating step of Keener '230 that involves raising the temperature of a heat treated, coated fastener far above 300°F. for extended periods of time is completely contrary to the teaching of the present invention, and the invention as claimed. It is therefore respectfully submitted that Claims 8, 10, 11 and 13 patentably distinguish the combination of Keener '230 and Kishikawa et al., and that the rejection of Claims 8, 10, 11 and 13 on the grounds of obviousness from Keener '230 in view of Kishikawa et al. should be withdrawn.

Claims 1, 3, 4, 6, 15 and 18 were rejected under 35 U.S.C. §103(a) on the grounds of obviousness from Keener '230 in view of Kishikawa et al., further in view of Nonweiler et al. and Kaneko et al. Nonweiler et al. was cited as teaching grit blasting with aluminum oxide. Kaneko et al. was cited as teaching improving corrosion resistance by a chromating treatment. Claim 1 as amended recites “maintaining the temperature of the coating and the heat treated rivets below a maximum temperature of about 300°F.” Claim 4 similarly recites “maintaining the temperature of the coating and the heat treated rivets below a maximum temperature of about 300°F.” Claim 15 similarly recites “maintaining the temperature of the coating and the heat treated rivets below a maximum temperature of about 300°F.” It is respectfully submitted that Claims 1, 3, 4, 6, 15 and 18 patentably distinguish the combination of Keener '230, Kishikawa et al., Nonweiler et al. and Kaneko et al. for the reasons noted above, and that the rejection of Claims 1, 3, 4, 6,

15 and 18 on the grounds of obviousness from Keener '230 in view of Kishikawa et al., further in view of Nonweiler et al. and Kaneko et al. should be withdrawn.

In light of the foregoing amendments and remarks, it is respectfully submitted that the application should now be in condition for allowance, and an early favorable action in this regard is respectfully requested. The Commissioner is authorized to charge any deficiencies or fees in connection with this amendment to Deposit Account No. 06-2425.

Respectfully submitted,

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